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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,040	12/21/2001	Nishant Sinha	150.01140101	2997
26813	7590	03/19/2004	EXAMINER	
MUETING, RAASCH & GEBHARDT, P.A.			DEO, DUY VU NGUYEN	
P.O. BOX 581415			ART UNIT	
MINNEAPOLIS, MN 55458			PAPER NUMBER	

1765

DATE MAILED: 03/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary****Application No.**

10/028,040

**Applicant(s)**

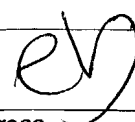
SINHA ET AL.

**Examiner**

DuyVu n Deo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 January 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-25, 27-33 and 35-58 is/are rejected.
- 7) ☒ Claim(s) 14, 26 and 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                             |                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                        | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/8/04</u> . | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-5, 8-13, 15-18, 21-25, 27-30, 32, 33, 35-37, 39, 41, 43, 45-46, 48, 50, 52, 54-55, 57, 58 are rejected under 35 U.S.C. 102(e) as being anticipated by Sachan et al. (US 2002/0111027 A1).

Sachan describes a polishing method comprising positioning a group VIII metal containing surface to interface with a polishing surface, where in the group VIII metals is selected from the group of rhodium, iridium, ruthenium, osmium, palladium, and platinum

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(paragraphs [0010], [0026], supplying a planarization composition in proximity to the interface, and planarizing the group VIII metal-containing surface, where the composition comprises organic compound such as mercaptoalkyl amine hydrochlorides (this would includes claimed organic alkyl amine group, therefore, it would read on claimed organic alkyl amine) (paragraph [0026], claim 4).

Referring to claims 16, 25, 28, 32, 33, 41, 43, 49 the composition further comprises of organic acids such as citric, tartaric acids (claimed organic chelating acid or complexing agent) (paragraph [0024]). The composition that uses ceria ( $\text{CeO}_2$ ) abrasives would read on claimed a majority of abrasive particles is  $\text{CeO}_2$  (paragraph [0013]).

Referring to claims 37, 46, 55, examples 1-3 shows the polishing method of the noble metal is carried out in one time (claimed one step). And the polishing method is typical carried out in one step (paragraph [0009]).

Referring to claims 48, 49, 52, Sachan shows the polishing method is used in the forming of capacitors where the noble metals are formed on a foundation dielectric and the noble metals are polished by CMP (claimed group VIII metal formed over a patterned dielectric layer) ([paragraphs [0008], [0009]).

Referring to claims 2, 3, 17, 29, an elemental form of Pt would have more than 50 atomic percent (paragraph [0010]).

Referring to claims 8-10, 21-23, the abrasive particles used include ceria, silica, and alumina (paragraph [0026]). These abrasive particles would have a hardness of no greater than about 9 Mohs.

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Referring to claim 12, table 1 shows the polishing ratio of the metal to that of the oxide layer is at least 10:1.

Claims 13, 35 have no patentable weight since Sachan disclose organic amine and diene is not necessary to be a part of the composition.

Referring to claims 15, 27, 58, the polishing surface can be a fixed abrasive article (paragraph [0026]).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6, 7, 19, 20, 31, 38, 40, 42, 44, 47, 49, 51, 53, 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sachan as applied to claims 1, 16, 28, 37, 39, 41, 43, 48, 50, 52, 55 above, and further in view of Van Buskirk et al. (US 6,346,741).

Unlike claimed invention, Sachan doesn't describe the composition includes an oxidizing agent such as peroxide. Van Buskirk describes a method for polishing noble metals where he teaches the composition includes hydrogen peroxide (claimed oxidizing agent) (col. 6, line 40-45; col. 8, line 45-60). It would have been obvious for one skill in the art to modify Sachan in light of Van Buskirk because Sachan describes that other chemicals that enhance the activity for removal of the polishing composition for attaining higher selectivity for removal of the target metal layer (paragraph [0011]) and Van Buskirk teaches that H<sub>2</sub>O<sub>2</sub> reacting with the noble metal

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to form product having a lower hardness than the noble metal so that to enhance removal rate of the metal film (col. 8, line 51-60; col. 13, line 1-25).

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-5, 8-27, 34, 37, 39, 41-42, 46, 48, 50, 51, 55 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Referring to the limitation of "an organic alkyl amine," even though page 13, lines 2-4 and claim 14 discloses several organic alkyl amines; however, these compounds do not represent every other single organic alkyl amines unless the specification disclosing so. The specification doesn't disclose of using any organic alkyl amine.

***Allowable Subject Matter***

7. Claims 14, 26, 34 remained objected and allowable as indicated in the previous rejection.

***Response to Arguments***

8. Applicant's arguments filed 1/27/04 have been fully considered but they are not persuasive.

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In response to applicant's argument that (claims 1-5, 8-27, 37, 39, 41, 42, 46, 48, 50, 51, 55, 57, 58) the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., claimed alkyl amines do not include sulfur) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Sachan discloses organic compound such as mercaptoalkyl amine hydrochlorides (this would include claimed organic alkyl amine group, therefore, it would read on claimed organic alkyl amine) (paragraph [0026], claim 4).

Referring to applicant's argument (claims 37, 46, 55, 57, 58) that Sachan discloses citric, lactic, malic, tartaric acid while applicant's claims do not include such compounds, applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

In response to applicant's argument that there is no teaching or recognition in Sachan of the advantages of the use of complexing agent with ceria in an abrasive for planarizing a group VIII metal-containing surface, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Referring to applicant's argument that there is no motivation to combine oxidizing agent with the composition of Sachan, please see (col. 8, line 51-60; col. 13, line 1-25) in Van Buskirk

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where he teaches that H<sub>2</sub>O<sub>2</sub> reacting with the noble metal to form product having a lower hardness than the noble metal so that to enhance removal rate of the metal film.

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DuyVu n Deo whose telephone number is 571-272-1462. The examiner can normally be reached on 6:00-3:30; with alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DVD

3/17/04

A handwritten signature, possibly reading "JD", is written below the date.